

Remarks

Claims 1 to 24 were examined and rejected, claims 25 to 32 were withdrawn from consideration, and new claims 33 to 37 have been added, and claims 3 and 4 have been canceled.

Specification

Applicants submit herewith a marked-up specification and substitute specification. Paragraph numbering and section titles have been added for convenience; references in the description to the claims have been deleted; and minor grammatical errors have been corrected.

In paragraphs 0030, 0045, 0070, 0085, and 0090 the term “portion” has been replaced by - - area - -.

The term “lightness” has been replaced by the term - - optical lightness - - for clearness of understanding.

At paragraph 0132, the words - - and through a conduit 123 - - have been inserted after the words “the throttle 124” to include a written description of a conduit that is shown and numbered in Fig. 5.

Similarly, at paragraph 0134, the words - - by an optical system 102 - - have been inserted after the words “image processing,” to provide a written description of an optical system shown and numbered in Fig. 5. Support for this amendment is found at paragraph 0059, where it reads:

“Capture may be performed for example by means of an optical system, preferably a camera and in particular a digital camera.”

No new matter has been added by these amendments.

Drawings

The drawings were objected to because in Fig. 5, items 102, 108, and 123 were shown and numbered, but not described in the written specification. Item 102 is an optical system and a written description has been added to paragraph 0134. As explained above, support for this amendment is found at paragraph 0059.

Numeral 108 was removed from the drawings.

Item 123 is obviously a conduit and is now described in paragraph 0132, as explained above.

Applicants respectfully submit that the objections to the drawings are traversed.

Amendments

The claims of this application have been amended to recite steps that better conform to standard U.S. claim drafting practices for method claims. Further, claims with alternative-type language such as claims 5, 18, and 24 have been amended to delete such language and new claims 32 to 35 have been added to recite the alternate features.

Further, claim 1 has been amended to recite that various object parameters are used in the objection recognition rule, such as distinguishing particle objects versus non-particle and distinguishing mineral versus biological objects.

Claim 7 has been amended to more clearly recite the boundary detection step and to traverse the 35 U.S.C. §112 rejection discussed below.

Claim 16 has been amended to recite physical qualities in Markush-type claim language to better conform to U.S. practices and to traverse the rejection under 35 U.S.C. §112 discussed below.

Claim 20 has been amended to recite steps in a manner that traverses the 35 U.S.C. §112 rejection by deleting the term “acquisition unit.”

Claims 10, 21, and 24 have been amended to traverse §112 rejections, as described below.

New claim 37 has been added to recite that defects are distinguished from objects, and defects are not considered by the object detection rule. This feature is disclosed in paragraph 87, for example. No new matter has been added by these amendments.

Rejection under 35 U.S.C. §112

Claims 7, 16 and 20 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The examiner stated that the claims contain subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The above-described amendments are believed to traverse these rejections.

Further, amended claim 7 is enabled by paragraph 91, for example, that states,

“Differences in hue, saturation, and/or intensity external of a specific tolerance zone are indicative of a contour or a transition from one object to the next. If faults are imaged in digitized form, object transitions or edges may preferably be detected by gradient formation or a boundary locating routine. This will allow recognition of individual objects.”

Amended claim 16 is enabled by paragraphs 0090 and 0091, for example, where it states: “Another step is provided for the determination of objects. To reduce the time and work and the amount of data required for the determination of objects, one area of interest is preferably identified which area of interest is characteristic for the determination of the at least one parameter. For example a search is performed for areas with different hues, saturation, and/or intensities which differ from other portions or lie external of a predetermined tolerance zone.”

“Differences in hue, saturation, and/or intensity external of a specific tolerance zone are indicative of a contour or a transition from one object to the next. If faults are imaged in digitized form, object transitions or edges may preferably be detected by gradient formation or a boundary locating routine. This will allow recognition of individual objects.”

Amended claim 20 is enabled because the term “acquisition unit” has been selected and the remaining terms are supported by paragraphs 0059 and 0060, which state,

“At least one predetermined quantity of milk is routed into a measuring chamber having at least one capturing unit. At least one part of the liquid phase of the milk in the measuring chamber is then drained out of the measuring chamber. At least a portion of the measuring chamber surface is captured. Capture may be performed for example by means of an optical system, preferably a camera and in particular a digital camera. Such digital camera will supply an image of a surface in the measuring chamber. The image will then be analyzed so as to typify any detected objects. Depending on the result, the milk will either be routed to the marketable milk container or discarded.”

“Draining at least part of the liquid phase out of the measuring chamber may occur by routing the milk through a filter. It is also conceivable to decant the liquid phase such that any particles which may be in the milk are retained in the measuring chamber.”

Applicants respectfully submit that these claims are enabled by the specification. Thus, Applicants respectfully submit that amended claims 6, 7, and 20 satisfy 35 U.S.C. §112, first paragraph, and are enabled.

Claims 10, 21, and 24 were rejected under 35 U.S.C. §112, second paragraph. Claim 10 was amended to replace the term “lightness” with - - optical lightness - -. This term refers to different colors, shades, tones, etc. that can be detected from the object by a camera for example.

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The word "the" has been deleted to avoid confusion that may arise from a lack of antecedent basis.

Claim 21 has been amended to add the word - - chamber - - in the last line. This addresses the antecedent basis rejection made by the examiner.

Claim 24 has been amended to use the indefinite article - - a - - in reference to a detection frequency. Applicants respectfully submit that this amendment traverses the §112 rejection.

Rejection under 35 U.S.C. §102

Claims 1, 2, 8, 9, 10, 12, 13, 17, 18, 21, and 22 were rejected under 35 U.S.C. §102(e) as being anticipated by *Oosterling et al.*, U.S. Patent No. 6,578,516. To maintain a rejection under 35 U.S.C. §102(b), all of the elements of each claim must be disclosed in a single reference. The test for anticipation requires a strict, not substantial, identity of corresponding claim elements.

Finisar Corp. v. DirecTV Group, Inc., 523 F.3d 1323, 1334-35, 2008 U.S. Appl. LEXIS 8404, 27-28 (Fed. Cir. 2008).

Applicants respectfully submit that *Oosterling et al.* does not disclose each of the elements of original claim 1 or amended claim 1 or any of its dependent claims for the reasons stated below in the description of *Oosterling et al.* Claims 3 and 4 have been canceled and their terms added to claim 1. These claims were not rejected as being anticipated and now amended claim 1 is not anticipated either. Further, amended claim 1 would not have been obvious to one of ordinary skill in the art for the reasons set forth below.

Rejection under 35 U.S.C. §103

Claims 3 to 7, 11, 14 to 16, 19, 20, 23, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Oosterling et al.* Claims 3 and 4 have been canceled, and their terms

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added to claim 1. Amended claim 1 would not have been obvious to one of ordinary skill in the art for the reasons set forth below.

The Standard for Prima Facie Obviousness

To establish a *prima facie* case of obviousness a three-prong test must be met. First, there must be some suggestion or motivation, either in the references or in the knowledge generally available among those of ordinary skills in the art, to modify the reference. Second, there must be a reasonable expectation of success found in the prior art. Third, the prior art reference must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). See M.P.E.P. §2143. This can be modified by the motivation flowing from (1) the prior art references, (2) the knowledge of the skilled technologist, or (3) the nature of the problem being solved. *In re Dembicza*k, 775 F. 3d 994 (Fed. Cir. 1999). This rule has been clarified as being flexible in allowing a reason to combine that may not be limited to a teaching, suggestion or motivation.

Obviousness is not to be read into an invention on the basis of the Applicant's own statements; that is, the prior art must be viewed without reading into that art Applicant's teachings. *In re Murray*, 268 F. 2d 226, 46 CCPA 905; *In re Sporck*, 301 F.2d 686, 49 CCPA 1039. The issue, then, is whether the teachings of the prior art would, in and of themselves and without the benefits of Applicant's disclosure, make the invention as a whole, obvious. *In re Leonor*, 395 F.2d 801, 55 CCPA 1198.

The Court of Appeals for the Federal Circuit has strictly prohibited the use of the patent or invention at issue as a tool to combine prior art references to find obviousness. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). The obviousness of a claim should not be decided through the use of the

claim as a “guide through a maze of prior art references which combine the right references in the right ways so as to achieve the result of the invention, as defined by the asserted claim.”

General American Transportation Corp. v. Cryo-Trans, Inc., 893 F.Supp 774, 793 (N.D. Ill. 1995).

“The tendency to resort to ‘hindsight’ based upon Applicant’s disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. §2142.

While the Supreme Court in *KSR*, 127 S. Ct. at 1742, expressed its view that the Federal Circuit has at times overemphasized “the risk of courts and patent examiners falling prey to hindsight bias,” the bar to using hindsight in determining obviousness remains good law. *See, e.g., Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326 (Fed. Cir. 2008) (recognizing continuing obligation to guard against hindsight bias). *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed Cir. 2008) (same). As the *KSR* Court expressly noted, “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR*, 127 S. Ct. at 1742.

A flexible approach to the TSM (teaching, suggestion, or motivation) test remains the primary guarantor against a hindsight-based obviousness analysis. *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1364 (Fed. Cir. 2008). The TSM test, flexibly applied, prevents hindsight and ensures that the obviousness inquire focuses on evidence that existed before the time of invention, but without unduly constraining the knowledge and creativity of an ordinary skilled artisan. *Ortho-McNeil Pharm.*, 520 F.3d at 1364-65; *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1260 (Fed. Cir. 2007).

Oosterling et al.

In rejecting the claims, the examiner cites U.S. Patent 6,578,516 ("Oosterling et al.") as disclosing, teaching, suggesting or motivating one skilled in the art to arrive at the present invention. Applicants respectfully disagree with the examiner's interpretation of *Oosterling et al.* primarily because *Oosterling et al.* fails to disclose any specific means (other than visually by an operator) for automatically determining the *presence, size, or type* of an object from a milk sample. Specifically, *Oosterling et al.* fails to teach, suggest, or motivate one skilled in the art to apply an object recognition rule that distinguishes particle versus non-particle objects and mineral versus biological objects that were in a milk sample.

Oosterling et al. purports to disclose a device and method for detecting objects in a filter after milk has flowed through the filter. At column 3, lines 24 to 41, it states:

[W]hich lamp illuminates the filter 7 by means of a light beam B₁, and there is also a camera 6, such as for example a CCD camera, which is able to observe the contamination on the filter by means of a reflected beam B₂.

The radiation which is emitted by the lamp 5 may be ordinary white light, or alternatively infrared or ultraviolet light may be used, so that the flakes in the milk which have been deposited on the filter 7 can be detected more successfully. If appropriate, camera 6 and lamp 5 are combined.

After milk has finished flowing through the filter 7, the residues which have been deposited on the filter material 9 are observed by the camera 6. The camera 6 is connected to a processing unit with a memory. The contamination observed is compared with limit values which are contained in the memory, and the processing unit establishes *the nature and/or type of the contamination* detected and what consequences this observation will have.

(Emphasis added.)

Despite stating an objective, this is not disclosure of the claimed method for determining milk quality by detecting objects in a milk sample based on an object recognition rule. Rather, it is merely a recitation of a desirable goal without a teaching of how the goal is achieved.

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Oosterling et al. only vaguely discloses a device for determining milk quality with a camera, and there is no disclosure to one skilled in the art of an object recognition rule that can determine the presence, size or type of an object as recited in the claims of this application.

Indeed, there is no disclosure of automatically determining milk quality based on predetermined object parameters such as hues, saturation, and/or intensities which are outside a predetermined tolerance zone as described in the present invention application in paragraph 90. Certainly, there is no disclosure in *Oosterling et al.* of using a boundary locating routine to determine the existence or type of an object in a milk sample. (See: paragraph 91.)

Further, *Oosterling et al.* does not disclose any means for differentiating the type of objects in a milk sample as recited in amended claim 1 and claim 5, and described in this application at paragraphs 95 through 122 based on color, hue, intensity, shape, contour, and so on. These details are required to determine the existence, category and type of objection that may be in a milk sample and none of these features is disclosed in *Oosterling et al.* One skilled in the art would be left to guess how to detect objects, and especially the type of objects, in a milk sample.

Allowability of claims

In view of the amendments and the above comments regarding the deficiencies of *Oosterling et al.*, Applicants respectfully submit that amended claim 1 is novel because it now includes the terms of claims 3 and 4. Also amended claim 1 would not have been obvious because *Oosterling et al.* fails to teach, motivate or suggest an object recognition rule that distinguishes particles versus non-particles or biological versus mineral objects.

Further, without improper hindsight, there is no teaching, suggestion or motivation in *Oosterling et al.* to use an object recognition rule as recited in amended claim 1 to detect and

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distinguish the objects in a milk sample that are particle versus non-particle or biological versus mineral. Certainly, there is no suggestion to modify *Oosterling et al.* to use an object recognition rule because *Oosterling et al.* fails to disclose any means other than a light, a dark filter, and a camera for viewing objects.

There is no teaching, suggestion or motivation to use a light and camera to obtain a method for determining the presence of an object, whether the object is a particle or non-particle, and whether the object is biological or a mineral, as recited in amended claim 1. Further the size, shape, color, hue, contrast, or type of an object from a milk sample, as recited in the dependent claims would not have been obvious to one of ordinary skill in the art. Therefore, these claims are not obvious, and are allowable.

Oosterling et al. also fails to disclose a method for distinguishing faults and excluding them from any determination by the object determination rule, as recited in new claim 37, or milk quality grades as recited in claim 24.

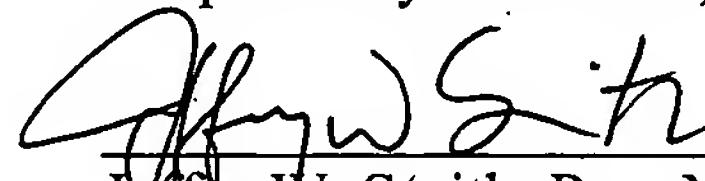
Applicants respectfully submit that pursuant to 35 U.S.C. §112 paragraph 4, the dependent claims incorporate by reference all the limitations of amended claim 1 and include their own patentable features, and are therefore in condition for allowance. Therefore, Applicants respectfully request the withdrawal of all rejections and prompt allowance of the claims.

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Conclusion

For the foregoing reasons, Applicants respectfully submit that the pending claims are allowable, and request that this case be passed to issue.

Respectfully submitted,


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